Name_____

Naming Organic Compounds from Structures

Element Color Key:

Carbon: either black or gray
Hydrogen: white **Oxygen:** red **Nitrogen:** blue

Station Number: 1

I: Structure of 1st Compound

a) Draw Lewis Structure b) Structure of compound

II: Naming of 1st Compound

1) Functional group (acid, alcohol, amine, ether, ester, aldehyde, ketone)

or type of hydrocarbon (alkane, alkene, alkyne):_____

i) Suffix:_____

ii) On what number carbon is functional group located? :_____

2) a) # of Carbons in Longest Carbon chain:_____

i) Prefix for this chain:_____

b) # of Carbons in other Carbon chain(s) :_____

ii) Prefix for this(these) chain(s) :_____

3) Name of compound:_____

I: Structure of 2nd Compound

a) Draw Lewis Structure b) Structure of compound

II: Naming of 2nd Compound

1) Functional group (acid, alcohol, amine, ether, ester, aldehyde, ketone) **or** type of hydrocarbon (alkane, alkene, alkyne):_____

i) Suffix:_____

ii) On what number carbon is functional group located? :_____

2) a) # of Carbons in Longest Carbon chain:_____

i) Prefix for this chain:_____

b) # of Carbons in other Carbon chain(s) :_____

ii) Prefix for this(these) chain(s) :_____

3) Name of compound:_____

Station Number: 2

I: Structure of 1st Compound

a) Draw Lewis Structure b) Structure of compound

II: Naming of 1st Compound

1) Functional group (acid, alcohol, amine, ether, ester, aldehyde, ketone)

or type of hydrocarbon (alkane, alkene, alkyne):_____

i) Suffix:_____

ii) On what number carbon is functional group located? :_____

2) a) # of Carbons in Longest Carbon chain:_____

i) Prefix for this chain:_____

b) # of Carbons in other Carbon chain(s) :_____

ii) Prefix for this(these) chain(s) :_____

3) Name of compound:_____

I: Structure of 2nd Compound

a) Draw Lewis Structure b) Structure of compound

II: Naming of 2nd Compound

1) Functional group (acid, alcohol, amine, ether, ester, aldehyde, ketone) **or** type of hydrocarbon (alkane, alkene, alkyne):_____

i) Suffix:_____

ii) On what number carbon is functional group located? :_____

2) a) # of Carbons in Longest Carbon chain:_____

i) Prefix for this chain:_____

b) # of Carbons in other Carbon chain(s) :_____

ii) Prefix for this(these) chain(s) :_____

3) Name of compound:_____

Station Number: 3

I: Structure of 1st Compound

a) Draw Lewis Structure b) Structure of compound

II: Naming of 1st Compound

1) Functional group (acid, alcohol, amine, ether, ester, aldehyde, ketone)

or type of hydrocarbon (alkane, alkene, alkyne):_____

i) Suffix:_____

ii) On what number carbon is functional group located? :_____

2) a) # of Carbons in Longest Carbon chain:_____

i) Prefix for this chain:_____

b) # of Carbons in other Carbon chain(s) :_____

ii) Prefix for this(these) chain(s) :_____

3) Name of compound:_____

I: Structure of 2nd Compound

a) Draw Lewis Structure b) Structure of compound

II: Naming of 2nd Compound

1) Functional group (acid, alcohol, amine, ether, ester, aldehyde, ketone) **or** type of hydrocarbon (alkane, alkene, alkyne):_____

i) Suffix:_____

ii) On what number carbon is functional group located? :_____

2) a) # of Carbons in Longest Carbon chain:_____

i) Prefix for this chain:_____

b) # of Carbons in other Carbon chain(s) :_____

ii) Prefix for this(these) chain(s) :_____

3) Name of compound:_____

Station Number: 4

I: Structure of 1st Compound

a) Draw Lewis Structure b) Structure of compound

II: Naming of 1st Compound

1) Functional group (acid, alcohol, amine, ether, ester, aldehyde, ketone)

or type of hydrocarbon (alkane, alkene, alkyne):_____

i) Suffix:_____

ii) On what number carbon is functional group located? :_____

2) a) # of Carbons in Longest Carbon chain:_____

i) Prefix for this chain:_____

b) # of Carbons in other Carbon chain(s) :_____

ii) Prefix for this(these) chain(s) :_____

3) Name of compound:_____

I: Structure of 2nd Compound

a) Draw Lewis Structure b) Structure of compound

II: Naming of 2nd Compound

1) Functional group (acid, alcohol, amine, ether, ester, aldehyde, ketone) **or** type of hydrocarbon (alkane, alkene, alkyne):_____

i) Suffix:_____

ii) On what number carbon is functional group located? :_____

2) a) # of Carbons in Longest Carbon chain:_____

i) Prefix for this chain:_____

b) # of Carbons in other Carbon chain(s) :_____

ii) Prefix for this(these) chain(s) :_____

3) Name of compound:_____

Station Number: 5

I: Structure of 1st Compound

a) Draw Lewis Structure b) Structure of compound

II: Naming of 1st Compound

1) Functional group (acid, alcohol, amine, ether, ester, aldehyde, ketone)

or type of hydrocarbon (alkane, alkene, alkyne):_____

i) Suffix:_____

ii) On what number carbon is functional group located? :_____

2) a) # of Carbons in Longest Carbon chain:_____

i) Prefix for this chain:_____

b) # of Carbons in other Carbon chain(s) :_____

ii) Prefix for this(these) chain(s) :_____

3) Name of compound:_____

I: Structure of 2nd Compound

a) Draw Lewis Structure b) Structure of compound

II: Naming of 2nd Compound

1) Functional group (acid, alcohol, amine, ether, ester, aldehyde, ketone) **or** type of hydrocarbon (alkane, alkene, alkyne):_____

i) Suffix:_____

ii) On what number carbon is functional group located? :_____

2) a) # of Carbons in Longest Carbon chain:_____

i) Prefix for this chain:_____

b) # of Carbons in other Carbon chain(s) :_____

ii) Prefix for this(these) chain(s) :_____

3) Name of compound:_____

Station Number: 6

I: Structure of 1st Compound

a) Draw Lewis Structure b) Structure of compound

II: Naming of 1st Compound

1) Functional group (acid, alcohol, amine, ether, ester, aldehyde, ketone)

or type of hydrocarbon (alkane, alkene, alkyne):_____

i) Suffix:_____

ii) On what number carbon is functional group located? :_____

2) a) # of Carbons in Longest Carbon chain:_____

i) Prefix for this chain:_____

b) # of Carbons in other Carbon chain(s) :_____

ii) Prefix for this(these) chain(s) :_____

3) Name of compound:_____

I: Structure of 2nd Compound

a) Draw Lewis Structure b) Structure of compound

II: Naming of 2nd Compound

1) Functional group (acid, alcohol, amine, ether, ester, aldehyde, ketone) **or** type of hydrocarbon (alkane, alkene, alkyne):_____

i) Suffix:_____

ii) On what number carbon is functional group located? :_____

2) a) # of Carbons in Longest Carbon chain:_____

i) Prefix for this chain:_____

b) # of Carbons in other Carbon chain(s) :_____

ii) Prefix for this(these) chain(s) :_____

3) Name of compound:_____

Review Questions

1) Which two compounds in this activity can be mixed together to synthesize an ester? Show this reaction.

2) Which compound(s) is(are) susceptible to hydrogenation and halogenation reactions?

3) Which compounds in this lab are isomers?

4) Which compound can have *cis*- and *trans*- isomers? Draw them both.

5) What is the VSEPR geometry and hybridization around each central atom in:

a. compound 1B b. compound 3A c. compound 6A

6) Write out the products of the following reactions.

a) Compound 2B and 2HBr

b) Compound 3B and $KMnO_4$ (an oxidizer).

c) Compound 6B and H_2O